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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,751	07/28/2003	Ramarathnam Venkatesan	MS1-422USC1	4862
22801	7590	07/16/2007		
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			EXAMINER DO, ANH HONG	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 07/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/628,751	Applicant(s) VENKATESAN ET AL.	
	Examiner ANH H. DO	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/26 + 2/28/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/26/2007 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 8, 10, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Mihcak et al. (U.S. Patent No. 6,996,273).

Regarding claim 1, Mihcak discloses:

- receiving an image (Fig. 1: segmenter 110 receiving a digital image signal 105);
- deriving a single hash value representative of the image, as a whole, such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in identical hash values, whereby a comparison between a hash value of a first image and a hash value of a second image indicates whether the first and second images are distinct or visually similar (col. 7, lines 22-38: the hashing techniques generating hash values (a single hash value for each image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values, and the comparison between hash values of images X and Y indicates that they are visually similar).

Regarding claim 2, Mihcak teaches a system memory for storing a hash value in association with an image (Fig. 4: system Memory 906).

Regarding claim 4, Mihcak teaches comparing the hash value with another hash value derived from another image (col. 7, lines 31-34: comparing two hash values).

Regarding claim 8, Mihcak discloses:

- a segment combiner 160 as an image hashing unit to compute a single hash value representative of an image, a whole (Fig. 1), such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in identical hash values (col. 7, lines 22-38: the hashing techniques generating hash values (a single hash value for each

image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values);

- a storage to hold the hash value (Fig. 4: system memory 906).

Regarding claim 10, Mihcak teaches an image comparison module to compare the hash value representative of the image with a second hash value representative of a second image to determine whether the images are visually distinct or visually similar (col. 7, lines 31-38).

Regarding claim 12, Mihcak discloses a computer readable medium having computer-executable instructions, which when executed on a processor, direct to a computer to (Fig. 4: computer 902; and col. 15, lines 4-15):

- compute a single hash value representative of a digital image, as a whole, such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in identical hash values (col. 7, lines 22-29: the hashing techniques generating hash values (a single hash value for each image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values similar);

- store the hash value in relationship with the digital image (Fig. 4: system memory 902);

- whereby a comparison between a hash value representative of the digital image and a hash value representative of a second image indicates whether the digital image and the second image are visually distinct or visually similar (col. 7, lines 30-38: comparing between the hash values of images X and Y to indicate the images are visually similar).

Regarding claim 15, Mihcak teaches computer-executable instructions, which when executed on a processor, direct to a computer to compare the hash value with another hash value representative of another image (col. 7, lines 30-38).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 7, 9, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihcak (U.S. Patent No. 6,996,273) in view of Chang et al. ("RIME: A Replicated Image Detector for the World-Wide Web").

Regarding claim 5, Mihcak discloses:

- receiving an image (Fig. 1: segmenter 110 receiving a digital image signal 105);
- deriving a single hash value representative of the image, as a whole, such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in

identical hash values (col. 7, lines 22-34: the hashing techniques generating hash values (a single hash value for each image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values).

Mihcak does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image, whereby the watermarked image is resistant to break once run everywhere attacks (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image in Mihcak as taught by Chang in order to achieve accurate copy detection.

Regarding claims 7 and 11, Mihcak discloses:

- computing a single hash value representative of the image, as a whole, such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in identical hash values (col. 7, lines 22-34: the hashing techniques generating hash values (a single hash value for each image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values).

Mihcak does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image, whereby the watermarked image is resistant to break once run everywhere attacks (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image in Mihcak as taught by Chang in order to achieve accurate copy detection.

Regarding claims 9 and 14, although teaching as in claims 8 and 12, Mihcak does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image in Mihcak as taught by Chang in order to achieve accurate copy detection.

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7. Claims 3, 6 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Mihcak (U.S. Patent No. 6,996,273) in view of Hull et al. (U.S. Patent No. 5,465,353).

Regarding claims 3 and 13, although teaching as in claims 1 and 12, Mihcak does not specifically teach indexing the image using the hash value.

Hull teaches, in the same field of endeavor, teaches indexing the image using the hash value, wherein the hashing has been used to speed up matching in the system (col. 3, lines 9-13).

Therefore, it would have been obvious to have indexing the image in Mihcak as taught by Hull in order to speed up the matching operation in the system.

Regarding claim 6, Mihcak discloses:

- computing a single hash value representative of the image, as a whole, such that images that are visually distinct result in hash values that are approximately independent of one another and images are different but visually similar result in identical hash values (col. 7, lines 22-34: the hashing techniques generating hash values (a single hash value for each image) such that images X and Y are visually distinct result in hash values that are approximately independent of one another, and images X and Y that are different but visually similar result in identical hash values).

Mihcak does not specifically teach indexing the image using the hash value.

Hull teaches, in the same field of endeavor, teaches indexing the image using the hash value, wherein the hashing has been used to speed up matching in the system (col. 3, lines 9-13).

Therefore, it would have been obvious to have indexing the image in Mihcak as taught by Hull in order to speed up the matching operation in the system.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H. DO whose telephone number is 571-272-7433. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EILEEN LILLIS can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 7, 2007



**ANH HONG DO
PRIMARY EXAMINER**